

DE PLANTIS TOXICARIIS E MUNDO
NOVO TROPICALE COMMENTATIONES IX

A NEW SPECIES OF ICHTHYOTOXIC PLANT
FROM THE AMAZON

BY

RICHARD EVANS SCHULTES AND JOSÉ CUATRECASAS

The rare bombacaceous genus *Patinoa* was described in 1953 (Cuatrecasas, J.: *Rev. Int. Bot. Appl. Agric. Trop.* Nos. 369–370 (1953) 309, figs. 1, 2, t. 3, 6–13) on the basis of *P. Almirajo* Cuatr., a species native to the Pacific coastal regions of Colombia: near Quibdó in the Intendencia del Chocó. It is a fruit tree cultivated in rain forested sites and known locally under the name *almirajó*, source of its specific epithet.

At the same time (Cuatrecasas, J.: *loc. cit.* 312, fig. 3, t. 3, 14), a second species — *Patinoa sphaerocarpa* Cuatr. — was described from the central part of the Brazilian Estado do Amazonas, where the tree is called *cupú*.

In 1902, Jacques Huber (Huber, J.: *Bol. Mus. Paraense* 3 (1902) 430) described *Matisia paraensis* from the eastern Amazon. Recent studies have indicated that this concept properly belongs in the genus *Patinoa*; and, in 1971, the necessary new combination — *P. paraensis* — was made (Cuatrecasas, J.: *Phytologia* 20 (1971) 471). This species is now known from a number of localities in the Brazilian Amazon from Belém, at the mouth of the Rio Amazonas, west to the Río Javari on the Peru-

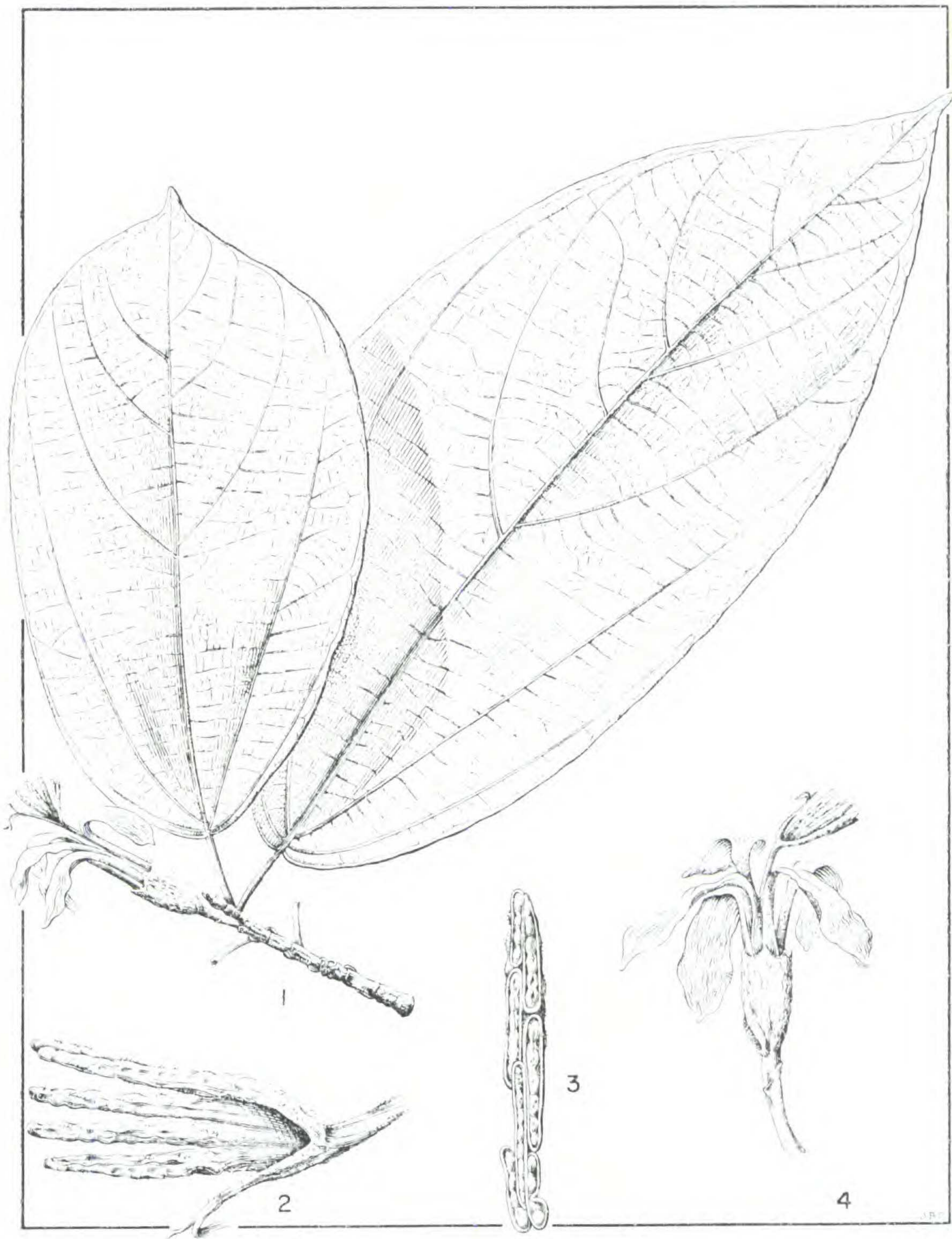
vian frontier. It is known vernacularly as *cupú-rana* or *cupuassú-rana*, an indication that the natives recognize the similarity of this bombacaceous tree to the related sterculiaceous *Theobroma grandiflorum* (Willd. ex Spreng.) Schumann, the *cupuassú* of the Amazon Valley.

The generic concept *Patinoa* is closely akin to *Matisia*, from which it differs primarily in having seeds covered with a thick, lanate tomentum. This wool surrounding the seeds is very conspicuous in the new species described below. In fact, until the fruit was carefully examined, the collections from the type tree were tentatively assigned to the genus *Quararibea* or *Matisia*. Other significant and distinctive characters of *Patinoa* are found in the structure of the stigmas and the pollen grains.

***Patinoa ichthyotoxica* R.E. Schultes et Cuatrecasas sp. nov.**

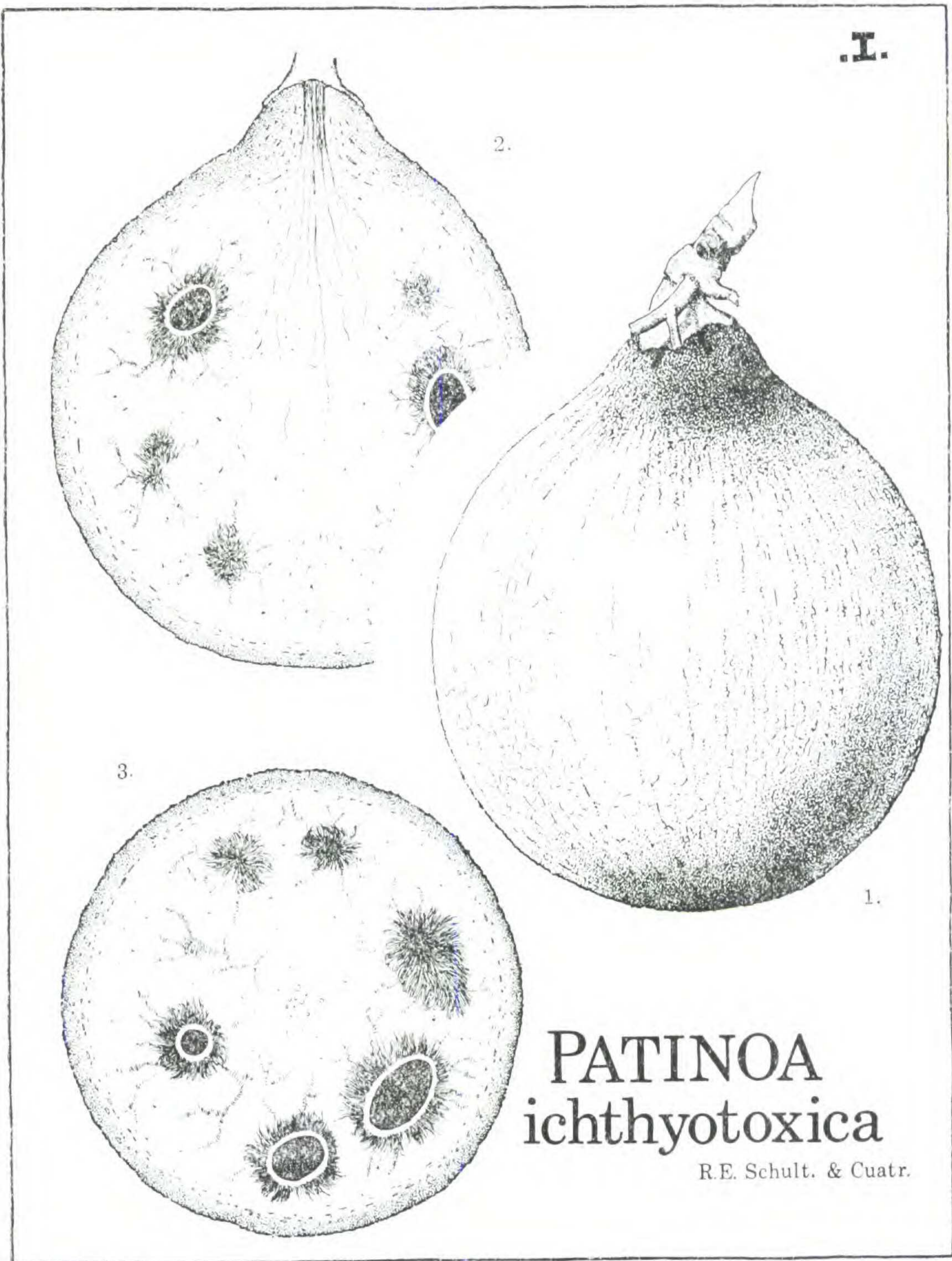
Arbor mediocris usque ad 30 ped. alta, caudice erecto basim versus 25–40 cm. in diametro, ramis subverticillatis, patulis vel decumbentibus, ramulis terminalibus glabris, cinereo-rugoso cum cortice, suberoso, foliorum cicatricibus magnis conspicuis, apicem versus subrubrescentibus, foliis aliquid pendulis. Stipulae ovatae, acutae, brunneo-rufescentes, crassiusculae, usque ad 5 mm. longae, vix caducae. Folia simplicia integraque, valde coriacea; petiolus 2–3 cm. longus, subteres, subcrassus, apicem et basim versus etiam infra laminam saepe geniculatus, minutissime cinereo-lepidotus; lamina obovato-elliptica vel obovata, basi rotundata vel irregulariter subcordata, apice abrupte acuminata vel cuspidata, leviter marginata, plus minusve 20–36 cm. longa, 8–18 cm. lata, supra atro-viridia utrinque glabra et nitida, subtus pallidioria, ut videtur glabra sed copiosis minutissimis squamis inconspicuis aspersis et sparis pilis stellatis circa 0.4 mm. ad

PLATE XII



PATINOA ICHTHYOTOXICA R. E. Schult. & Cuatr. 1, leaves and flower, approximately $\frac{1}{3}$ natural size. 2, terminal part of stamen tube, $2\frac{1}{3}$ times natural size. 3, stamen lobe, approximately 8 times natural size. 4, flower, slightly under $\frac{1}{2}$ natural size. *Drawn by* JOSHUA B. CLARK

nervos principales instructa, basi quintuplinervia, nervis tribus principalibus utrinque prominentibus submarginibus duobus arcuato-ascendentibus, quattuor nervis secundariis ascendentibus angulo acuto utroque latere e nervi medii orientibus, nervis tertiis transversis subtus prominentibus nervulis minoribus reticulum formantibus. Flos usualiter solitarius (rarenter duo) subterminalis, ad ramusculorum hornotinorum apicem folium oppositus oriens, pedicello crassissimo, rigido, glabro, usque ad 15 mm. longo, 3-4 mm. in diametro, apicem versus duobus cum bracteolis subtriangularibus, obtusis, crassis, 3.5 mm. longis, 4 mm. latis, minute granuloso-lepidotis. Gemma magna, usque ad 30 mm. longa, 10 mm. in diametro. Calyx atrovirens, tubulosus, basi rotundatus, apice inaequaliter breviterque 4-5-dentatus, dentibus latissime triangularibus, ad 1 mm. altis, crassus, ductibus mucilagiferis, extus glaber sed minutissime albido-glandulosus et apicem versus distante albo-stellatus, intus densissime albo-villosus, 20 mm. longus. Petala quinque, aestivatione contorta, crassa, flava sed faucem versus rubra, extus densissime stellata, intus leviter stellato-tomentella, ligulata, abrupte acuta, 80 mm. longa, 13 mm. lata. Stamina in tubum elongatum, crassum, glabrum, plus minusve 55 mm. longum, concrescientia extremo uno latere apertum atque in quinque lacinias antheriferas lineari-ligulata apice subrotundatas, 20-23 mm. longas, 2-2.5 mm. latis productum; laciniis intus laevibus, glabris, extus saccis polliniferis bilocularibus mucilagiferis valde elongatis, 6-9 mm. longis et duo alteris brevibus (supra columnam decurrentibus) longitudinaliter et dense dispositis. Ovarium petagonum subpyramidatum, 6-7 mm. longum, 5 mm. in diametro, villosum, 5-loculare, loculis pluriovulatis, ovalibus anatropis. Stylus subvillosus, parte tubo staminale inclusa filiformi parte libera valde incrassata, striata, apice an-



Fruit approximately $2/5$ natural size. 1, whole fruit. 2, longitudinal section. 3, cross section.

Drawn by IRENE BRADY

gustata, quinque ramis stigmaticis filiformibus flavis acutis instructus. Fructus globosus, apice non mucronato-acutus, basim versus contractus, superficie laevis, vivo atroviridia, maturitate leviter fulvo-viridis, siccitate flavo-brunneus, omnino densissime minutissimeque chryso-granulosus atque maxime sparsissime albido-pilosus, usque ad 19 cm. longus, 15–16 cm. in diametro; pedunculo 3–4 cm. longo, 1–1.5 cm. crasso; epicarpio sublig-noso, 3–3.5 mm. crasso; mesocarpio et endocarpio carnosus primum quinque septis instructis deinde in pul-pam fibroso-farinaceam albam vertendis. Semina magna, atrobrunnea, irregulariter ovoidea, 2.5–2.8 cm. longa, 2 cm. lata, viginti ad vigintiocto 5-seriata in pulpa in-voluta; epispermo duro, firme coriaceo, 1 mm. crasso, extus pilis crispis intricatis densissimis indumentum lana-tum fulvo-brunneum, usque ad 10 mm. crassum forman-tibus; cotyledonibus rectis, integris, crassis, albidis.

COLOMBIA: Comisaria del Amazonas, Río Amazonas, near mouth of Río Loretoyacu and Puerto Nariño. "Tree 10 m. tall. Hypanthium tube green. Petals fleshy, yellow, red at throat. Anthers yellow. Fruit green, 15 cm. in diameter. In pasture." January 28–February 7, 1969. *T. Plowman, T. Lockwood, H. Kennedy et R.E. Schultes 2317*. (TYPE in Econ. Herb. Oakes Ames.)—Same locality. "Tree. Sepal tube green. Petals greenish yellow. "September 16, 1963. *D. Soe-jarto 884*.—Same locality. "Tree 50 feet. Flowers greenish yellow. Alkaloid test on leaves doubtful; bark doubtful." September 13–15, 1966. *R.E. Schultes, R.F. Raffauf et D. Soejarto 24117*.

Patinoa ichthyotoxica differs strikingly from the other three species in its fruit which is very large and nearly perfectly globose. The fruit of *Patinoa paraensis* and *P. Almirajo* are, respectively, ovoid and elliptic-ovoid. In shape, the fruit of this new species resembles that of *Patinoa sphaerocarpa*, but it is much larger and differs in several internal characters. There are also conspicuous differences in shape and indument of floral parts between *Patinoa ichthyotoxica* and the other three species.

As indicated by the specific epithet, *Patinoa ichthyotoxica* possesses fish-stunning properties and is valued by the Tikuna Indians of the Leticia area of the Colombian Amazon as a fish poison. These natives, who know the tree as *tě-ha-ra* and the pulp of the fruit as *go-tě-har-ra*, collect and dry the abundant fibrous-farinaceous pulp and store it for use during the year. It is not the most commonly employed fish poison among the Tikunas, but it is utilized especially when they make a canoe trip of several days' duration, because it is so easy to carry in a rubberized bag. The crushed, dried pulp is cast out over the surface of small, still inlets or "lagos" where the flow or movement of the imprisoned water is negligible. Within 20 to 30 minutes, small fish float to the surface stunned and are gathered up by the Indians.

Some Tikunas state that the seeds are roasted and eaten, while others insist that it is a dangerous food liable to induce serious diarrhoea and painful intestinal cramps. This disagreement on the part of the natives may be significant. It could reflect differences in preparation of the seeds for eating, but it may have a deeper meaning. The pulp of *Patinoa Almirajo* is commonly used as a food in the Chocó of Colombia, but *P. paraensis* of the Brazilian Amazon has a fruit which is said to be "not edible". (LeCointe, P.: "A Amazonia Brasileira III. Arvores e Plantas Uteis" (1934) 146). This reference may concern the pulp of the fruit instead of the seeds: it is not clear. The seeds of *Patinoa paraensis* are reported (Le Cointe, loc. cit.) to contain 24.6% of a viscous yellow oil which solidifies only at a very low temperature (-15° C).

Patinoa ichthyotoxica is not cultivated. It grows in the dense forests along the river's edge but just above the flood-level. It is common in the *estradas* ("tapping circuits") of *Hevea brasiliensis*, and native rubber tappers

frequently preserve trees encountered in their rubber circuits to gather the fruits for the fish-poisoning pulp. The type tree grows in a pasture, left, at the request of the Indians, when the forest was cleared for cattle raising.

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